



Lion Force Strategy

Pitch Document - WIP

June 2018



Ka Kui Cheng Ye
Authors: Karthik Moorthy, Contributors: Greg Hart

EXHIBIT 5653.R

EXHIBIT 5653.R-001

Slide 1

- 1 Replace grainy image
Ka Kui Cheng Ye, 7/5/2018

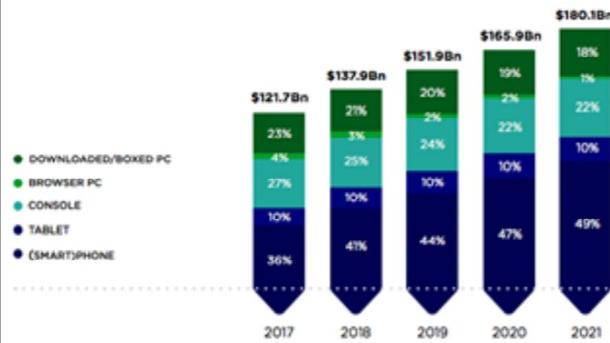
Contents :

- - 1. What's happening in gaming?
 - 2. How are we doing in gaming?
 - 3. What are our competitors' gaming strategies?
 - 4. What opportunities do we have?
 - 5. How do we capitalize on these opportunities?

Gaming has grown into a \$130+ Bn industry, larger than music and movies combined

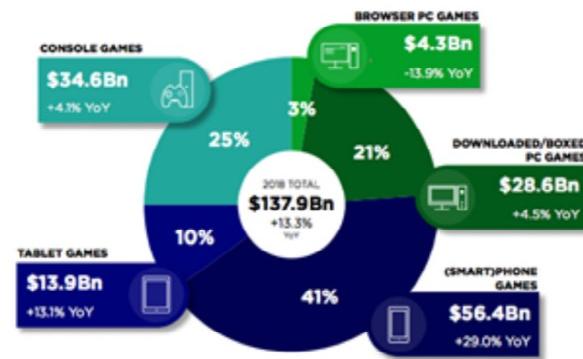
Gaming will continue to grow rapidly with a 10.3% CAGR until 2021

Projected global consumer spend (2017-2021) by device type



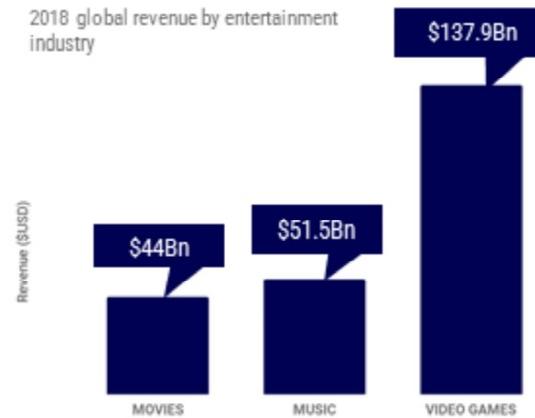
Mobile gaming is already the largest segment and the fastest growing with a projected 29% YoY growth rate

2018 global consume spend by device type



Gaming is larger than both music and movies industries combined

2018 global revenue by entertainment industry



Video game revenues above are defined as revenue generated by developers from consumer spending on games. It does not include:

- Advertising
 - Hardware and peripherals
 - B2B services, such as cloud infrastructure

Sources: Newzoo 2018 Global Games Report, Statista Movie Industry (Box office revenue), Statista Music Industry

Slide 3

2 Breakdown mobile spend between iOS and Android

Ka Kui Cheng Ye, 7/11/2018

1 Karthik Moorthy @google.com

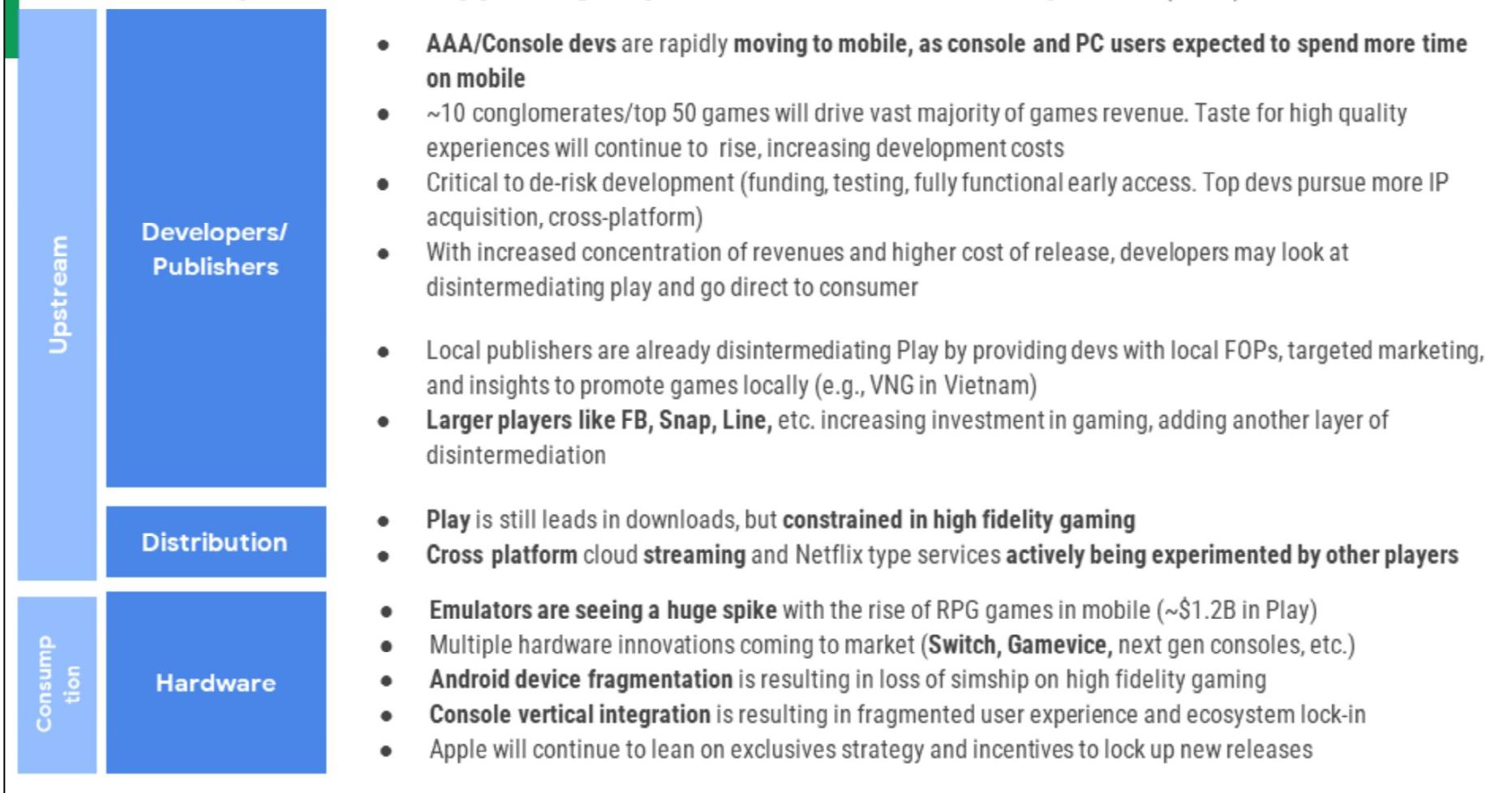
Will be helpful to see split by business model (F2P vs. Ads vs. Upfront Payment vs. Gaming subscriptions etc.) and CAGR for each.

Arvind Sharma, 7/11/2018

This accelerated growth of games has led to a complex gaming ecosystem...



... with multiple trends happening in parallel across the ecosystem (1/2)



- Games evermore important IP for other forms of entertainment (e.g., movies, books, etc..)?

Slide 5

3 Most dangerous trends...

Ka Kui Cheng Ye, 7/10/2018

... with multiple trends happening in parallel across the ecosystem (2/2)

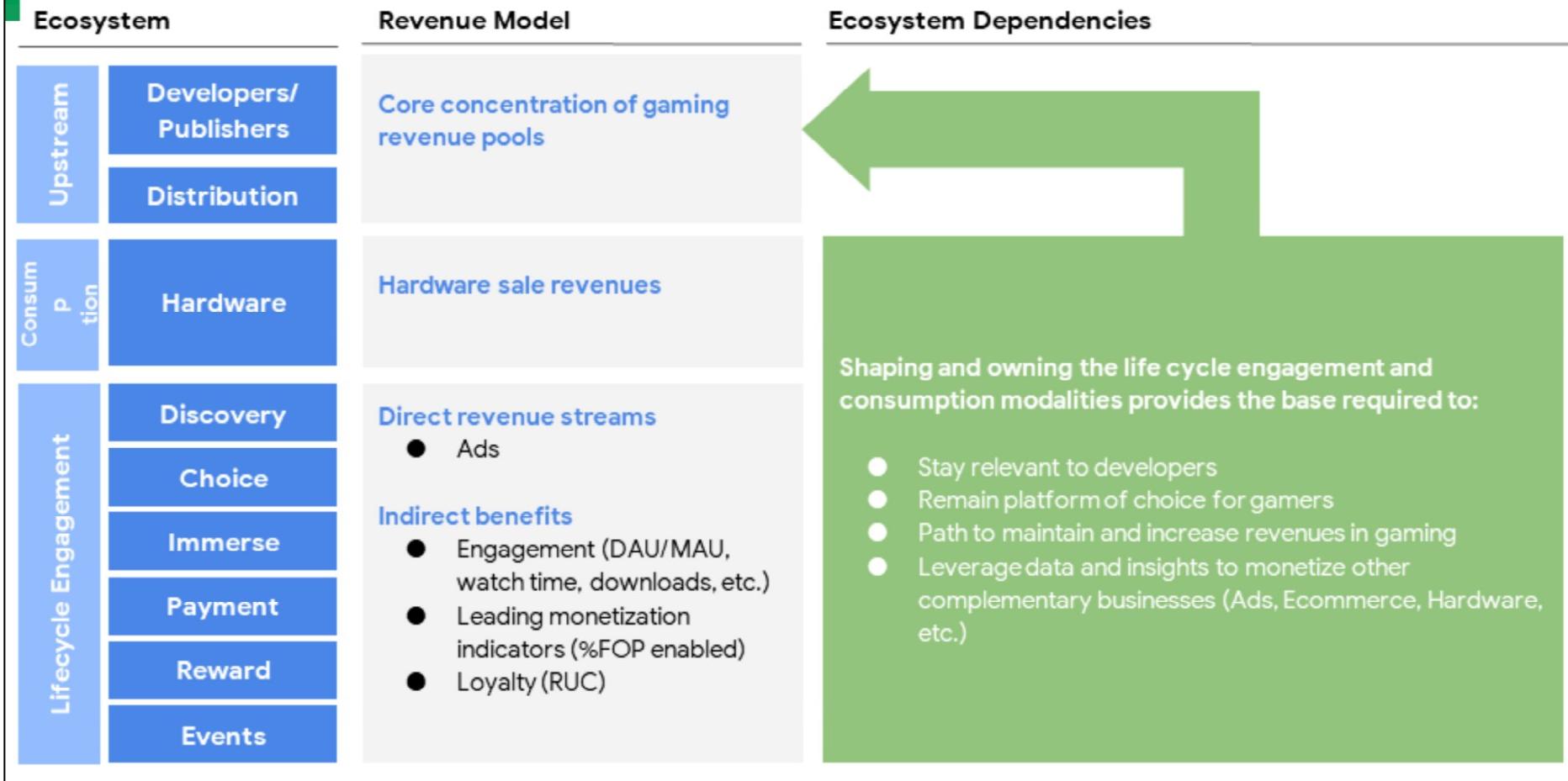


- **Social** (FB, YouTube, etc.), Ads, and PC/Console stores are **primary forms of discovery**
- Game choice is based on tech specs and game depth. Mobile is beginning to catch up to PC/Console with increasing AAA titles, but Android not positioned to capture this flow
- Game communities are centered around video/spectating/observing others and games are building these into their experiences
- **Currently, hard for users to stream video on Android, resulting in low mobile game content in YouTube, while Twitch is exploding with PC/Console game content**
- **Skew towards HVUs** in mobile paying users, unlike a **more healthy ecosystem in Console/PC**
- **No meaningful loyalty program in mobile**, but multiple aggressive players (e.g., AMZN)
- **Mobile esports in the cusp of mainstream** and ecosystem in millions of dollar in value

Slide 6

- 1 can we see if we get more data on how each of these is popular in gaming..e.g., twitch # of video and watctime etc
Ka Kui Cheng Ye google.com
Karthik Moorthy, 7/5/2018

In a nutshell, gamer lifecycle engagement is key to future growth



Slide 7

- 4 Potentially revisit
Ka Kui Cheng Ye, 7/9/2018

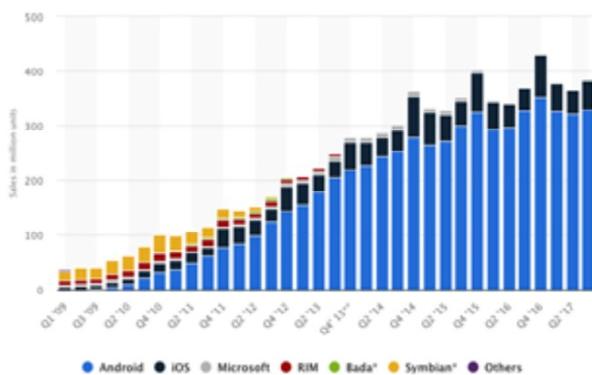
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Android is by far the most popular mobile gaming platform by users, while Play accounts for an overwhelmingly majority of downloads

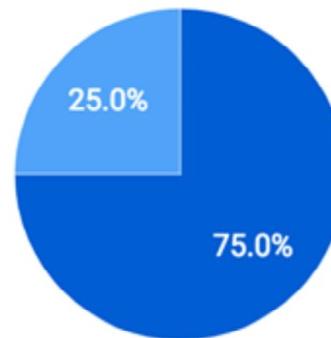
With over 300M units sold in Q1'18, Android has ~ 84% market share in smartphones

Global smartphone sales by OS (in million units)



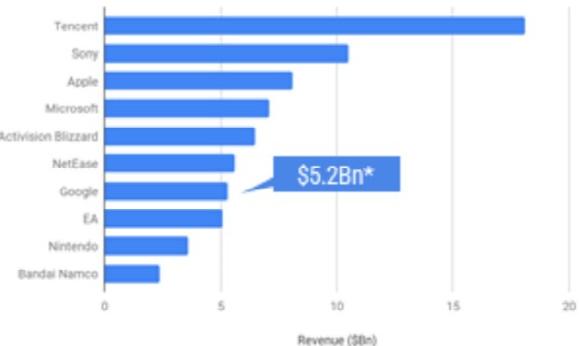
Accordingly, Play accounts for ~75% of all app and games downloads

2017 Apps & Games downloads by platform



Play is larger by revenue than some of the top gaming companies, including EA, Nintendo, and Bandai Namco

2017 revenue by gaming company



*Play rev is from gaming only and exclude apps

Sources: Newzoo 2018 Global Games Report, [Statista Smartphone Sales](#), [Newzoo 2017 Revenue by Company](#)

Slide 9

5 Look into Amazon

Ka Kui Cheng Ye, 7/9/2018

2 Can we get revenue and user numbers by platform for top 50-100 gaming companies?

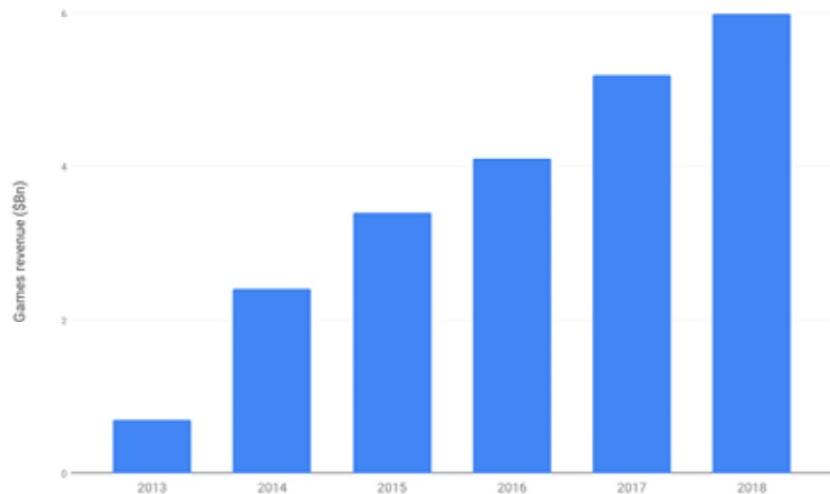
It will be helpful to know which titles and developers make the most money today.

Arvind Sharma, 7/11/2018

While Play has grown to ~\$6Bn gaming business in 2018 (forecasted), the revenue is coming from a tiny fraction of users, ~1.2% of Play active installs

Play has grown from a \$0.7Bn business in 2013 to \$6Bn in 2018 (~53.7% CAGR)

Play revenue over the last 5 years



However, our user install base has remained steadily at 1.2%, presenting a concentration issue

% Buyers (of Play active installs)

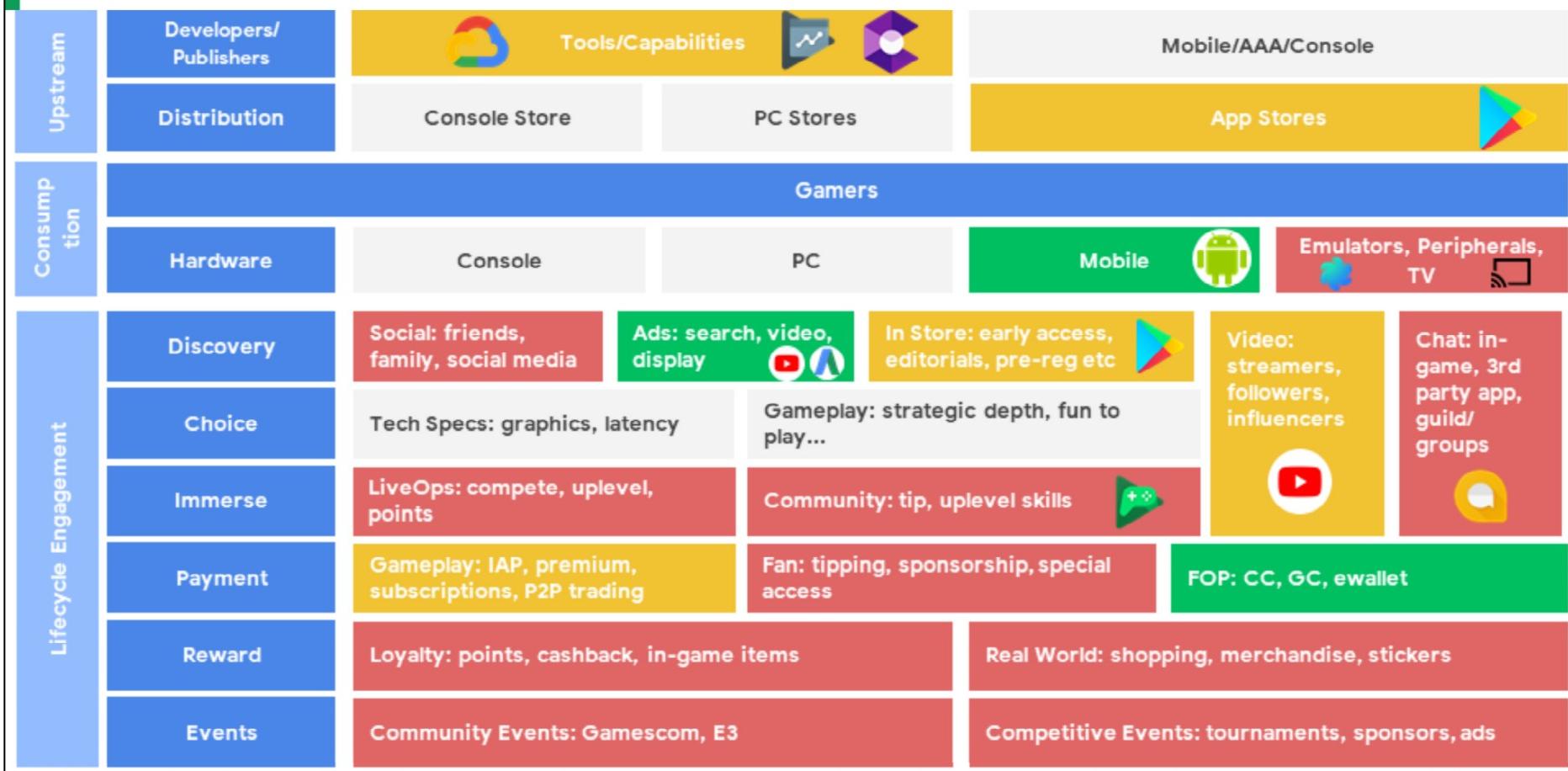


Sources: [Play Dasnav Revenue](#), [Play Dasnav % Buyers](#)

Slide 10

- 8 Apple vs. Google... HFG lower on Android vs. Apple (130M vs. 400M)
Ka Kui Cheng Ye, 7/9/2018
- 6 Opportunity of gamers vs. buyers... 70% of buyers are gamers
Ka Kui Cheng Ye, 7/10/2018
- 7 Warning signs and their numbers
Ka Kui Cheng Ye, 7/11/2018
- 3 buyer?
Arvind Sharma, 7/11/2018

To make matters worse, Google has multiple assets across the value chain, but no cohesive gaming strategy to engage the gamer lifecycle



Slide 11

1 ads are a form of payment as well

Tian Lim, 7/16/2018

2 only deliver rewarded ads to non paying segments. like me.

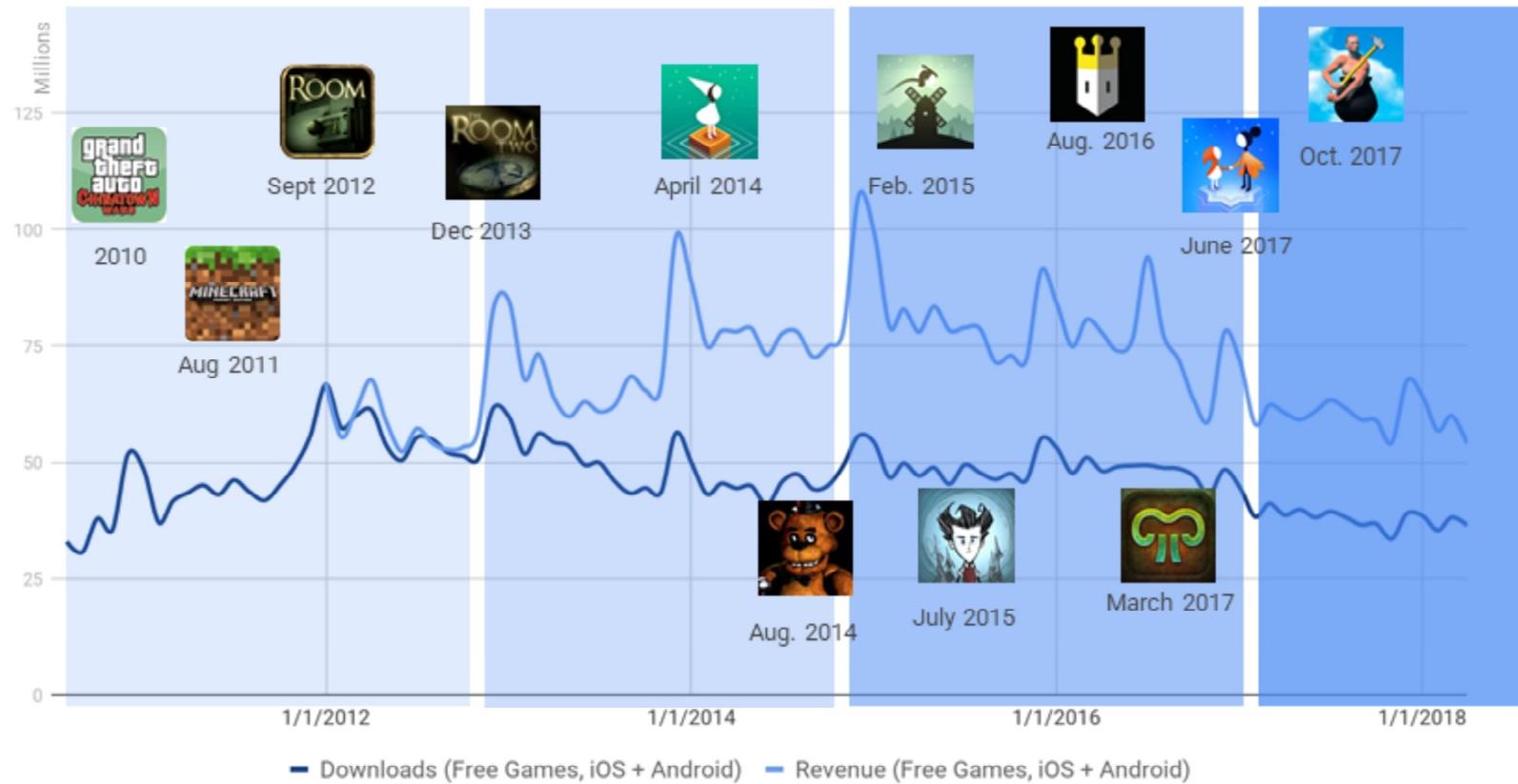
Tian Lim, 7/16/2018

For developers, rising development and marketing costs, as well as increased competition, have made the F2P market riskier



Hit-driven success, piracy, and discoverability issues have made it hard to make a business in premium

By contrast, revenue generated by game sales on Steam grew from 1.5B to 4.3B USD from 2014 to 2017*



Sources: [Statista.com](https://www.statista.com), Appannie

Slide 13

- 4 Legend is the same as previous slide - maybe you meant Paid Games?

Arvind Sharma, 7/11/2018

Consequently, developers expect more from us to justify our 30% fee

Top Developer Concerns

Open beta + Early Access: Developers confused between Open Beta and Early Access, contributing to confusing UX

Pre-registration: Works best for big IP titles or indies with existing communities, or for devs with \$\$\$ marketing budgets

Strategic Merchandising / Editorial: Support largely limited to big-name developers and/or IP

LiveOps Cards: Limited release and No data / ROI tracking

Commerce Solutions: Unseen hero for developers (DCB, security, anti-fraud, etc.)

PREX: Store algorithms seen as a black box. Store is spammy, promotes clones and fast-follow ons

Editorial Sales: In order to participate in store sales, developers are required to discount at high (sometimes dangerous) levels & change their app icon

Device Fragmentation: Costly to test and manage with little/insufficient tools from Android. Emulators now popular across TW, CN, and KR. Game revenue growth in China

Vulkan / GLES: Only big-name developers get bespoke engineering help. High cost of maintaining graphics stacks

Top Product Asks

- **Store Asks:**
 - Remove fake reviews
 - More granular insights on Store traffic (e.g., source, return users, etc..)
 - Dynamic store listing page - show a different app landing page on Play depending on user segment or traffic source
 - Predictive analytics capabilities to avoid "cold start"
- **Play Console asks:**
 - Improve device targeting on Play Console
 - App distribution management tools, similar to Hockeyapp
 - Ability to set up and run content/LiveOps specific to each user country/region without different APKs or servers
 - More flexible IAP prices for Emerging Markets
- **Better YouTube and Play integration (e.g., "Install Now")**

- Copy: https://docs.google.com/spreadsheets/d/1M5ZKEg4V8qxejuEaSblkq5KmUOgAjU_KYalU13Tv7_k/edit#gid=1578320996
- Original: <https://docs.google.com/spreadsheets/d/1-QeT7iX1-boGVPJCz2Wf5zHnYm4ptm1aw5p4HZbEDPk/edit#gid=1578320996>

Slide 14

- 9 which developer framework from greg/arvind? games of tomorrow deck or growth consulting deck? I don't see a dev framework on either. can you copy/paste the slides you meant?
Ka Kui Cheng Ye, 7/7/2018
- 10 check out slide 11 and slide 12, which graphically present the pressure devs face. I also create this slide with concerns and asks, but I'm thinking slide 11 and 12 tell the story we need for now and we can move this one down.
Ka Kui Cheng Ye, 7/7/2018
- 2 Ka Kui Cheng Ye@google.com i would like to another dimension of insights from dev consulting deck on what aspects are important to developers (insights, derisking, cloud , experimentation etc)... in addition to the frustration points.. maybe total 2 slides.. take points from the developer framework greg/ arvind had
Reassigned to Ka Kui Cheng Ye
Karthik Moorthy, 7/8/2018
- 3 https://docs.google.com/presentation/d/1aNLWQIyVzF2et9w8S8MK9bGL6LAKbMCYsAbYee71Y8o/edit#slide=id.g3bf675295e_30_22
Karthik Moorthy, 7/8/2018
- 1 Ka Kui Cheng Ye google.com Karthik Moorthy google.com

One of the things I heard when doing the dev / pub interviews for value chain was that the little guys need more help with analytics / data science. They simply can't match the big guys here anymore and its impacting their ability to drive monetization
Assigned to Ka Kui Cheng Ye
Ashnil Dixit, 7/9/2018

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Why is everyone trying to win in gaming? Because gamers represent a core valuable demographic of young and engaged users

Core Millennials



Average gamers are millennials with an age of 31

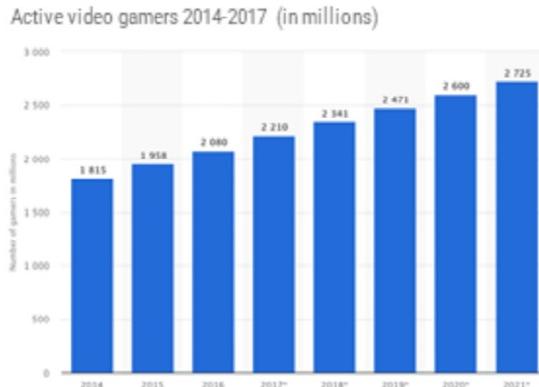


Sources: [Statista: Gamer Age Distribution](#), [Statista: Gamer Growth](#)

Growth



Worldwide number of gamers is expected to grow at 5.14% CAGR in the next 3 years



Hard to Reach



Fragmented across many different sites, apps, titles

TV not magic bullet

- 18-25 watch esports as much as hockey
- 190M watch esports regularly
- Only 4 hrs watching broadcast TV; 8 hrs gaming

Skeptical of advertising

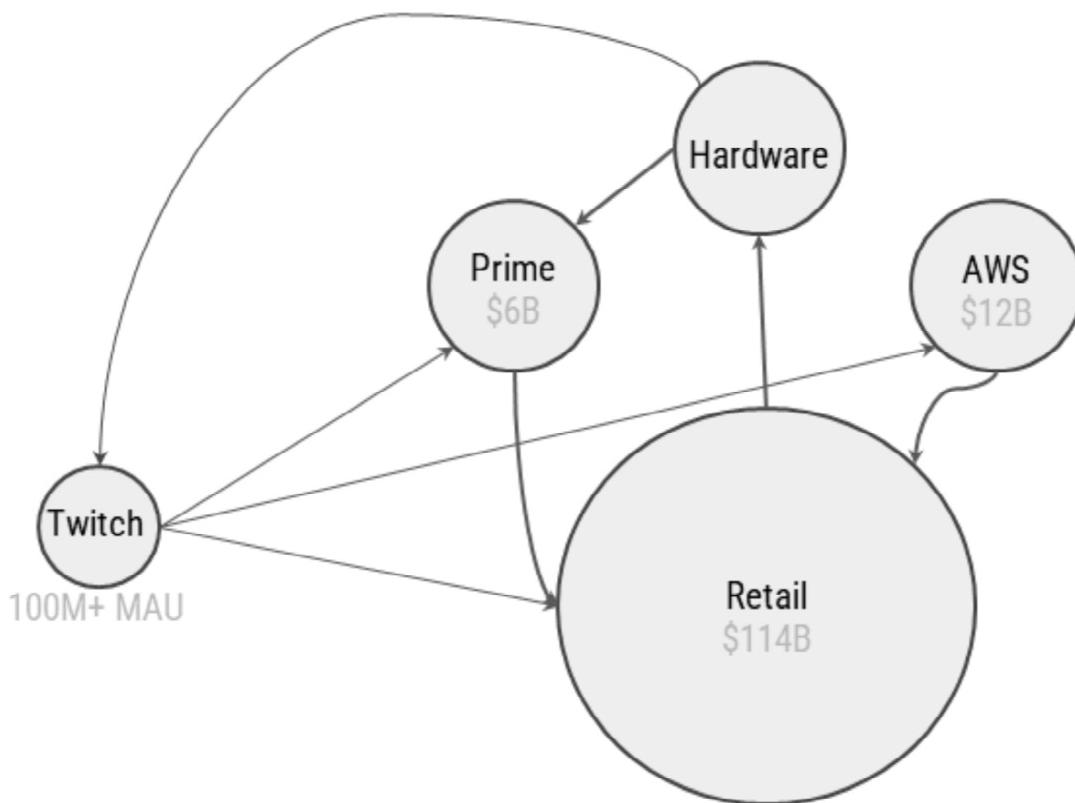
- 78% of fans would pay to skip ads
- Avid ad-blockers

- Credit goes to Dan Song's eSports slides

Many tech companies have a cohesive gaming strategy to reach the target demographic and grow their core business... but what is ours?



Amazon is investing in a full suite of products for developers and users across the entire stack that collectively reinforce their ecosystem value and retail business



Amazon key gaming assets & strategy

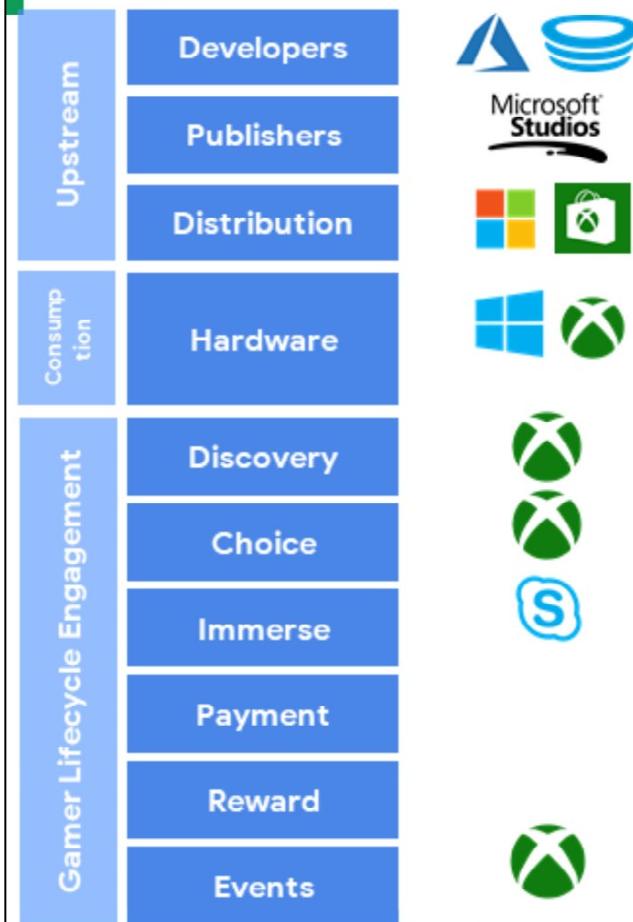
1. **AWS/Lumberyard/Gamesparks:** Backend infrastructure and tools for game development
2. **Twitch/Curse:** Central gaming platform for users and source for new Prime subscriptions
3. **Hardware:** Fire Tablet and Fire TV as distribution points for the Amazon Appstore, an alternative to Play with Amazon Coins for loyalty and discounts
4. **Retail:** Cross-section between developers and gamers, uniquely positioned to blend physical retail with digital offers to gamers (e.g. toys that unlock game content)

How they threaten Google

- Become the preferred platform for developers as they can build (AWS and Lumberyard), reach and engage users (Twitch), and sell through Amazon
- Continue to shift eyeballs from YouTube to Twitch
- Disintermediate Play by continuing to provide discounts to HVUs via the Amazon Appstore and doubling down on their Fire devices to provide more surfaces on which to sell mobile games

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

Capitalizing on their PC & console assets, Microsoft can shift into mobile gaming through their cloud-based business



Key gaming assets

- **Azure:** Backend infrastructure for game developers
- **Hockeye:** Platform for developers to track performance of mobile apps and games
- **Microsoft Studios:** Publishes major IPs, including Minecraft, Halo, and Age of Empires, and Gears of War
- **Retail:** Microsoft and Xbox Store
- **Windows:** Leading PC OS and preferred platform for PC developers and gamers
- **Xbox:** One of the leading consoles
- **Skype:** Communication platform

How they threaten Google

- Circumvent Play Store if Xbox/Windows cloud gaming takes off. Provide users with a platform agnostic, PC/console/mobile cross-play
- Leverage their IP to offer exclusives or early access in their mobile cloud gaming platform

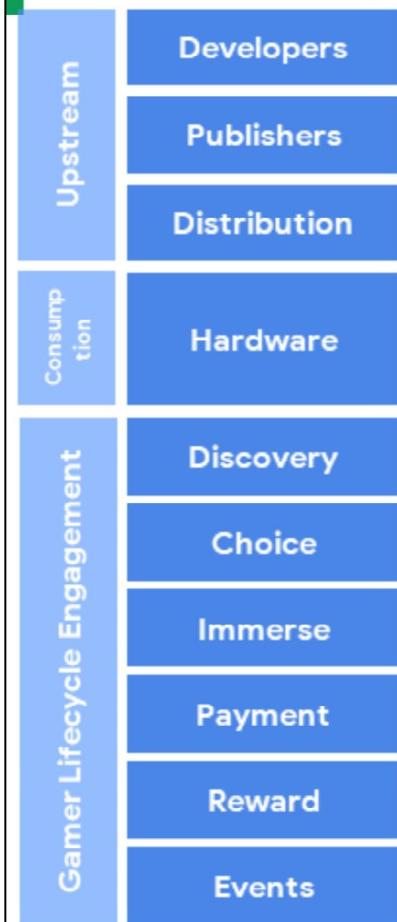
- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

Slide 19

11 MSFT next-gen consoles

Ka Kui Cheng Ye, 7/11/2018

Apple could become the default preferred mobile gaming with continued investments in HFG and their operations in China



Key gaming assets

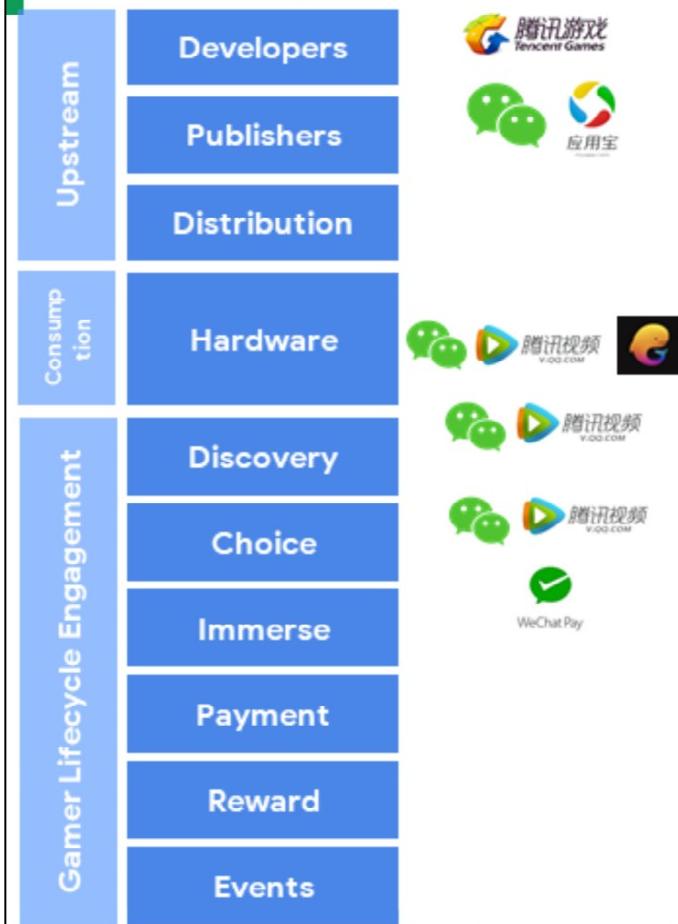
- App Store: #1 app store by revenue and consumer spend
- Xcode: Preferred dev tools for mobile game development
- iOS: Quickly becoming the preferred platform
- Mac OS: Rumored to support iOS apps and games soon, increasing the surfaces for mobile games and reinforcing ecosystem value to users
- Game Center: Community of mobile gamers

How they threaten Google

- Not necessarily a cohesive gaming strategy
- Reinforce both business and increases value to users
- Shifting towards merging iOS and MacOS, further converging their PC and mobile gaming businesses
Gamers, and HVUs in particular, will churn from Android to iOS
- Developers develop more and more on iOS first, creating an exclusive or early launch advantage for iOS

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

Tencent is consolidating the industry by aggressively investing in popular PC, console, and mobile gaming IP and expanding across the value chain



Key gaming assets

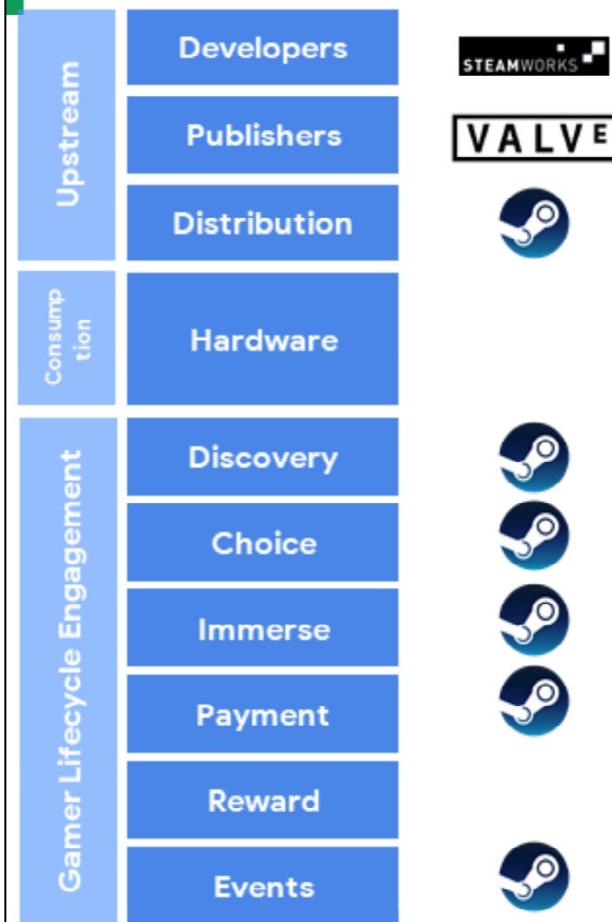
- Games: Fortnite, PUBG, League of Legends, Arena of Valor, Clash of Clans, Miniclip
- WeChat: #1 leading social platform in China
- WeChat Pay: One of the leading payment platforms in China, and increasingly SEA
- Tencent Gaming Emulator: Distribution for mobile games in PC

How they threaten Google

- Negotiating power
- Supplant distribution through WeChat
- Capture key Emerging Markets (e.g. SEA)

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

Coming from their strength on PC distribution, Valve can leverage its IP and brand to start making inroads into mobile gaming



Key gaming assets

- Games: CS:GO, Dota 2, Half-Life, Portal, Left 4 Dead, TF2
- Steam: #1 PC game distributor
- Steam Cloud: Play PC games on mobile

How they threaten Google

- Steam gaming app

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

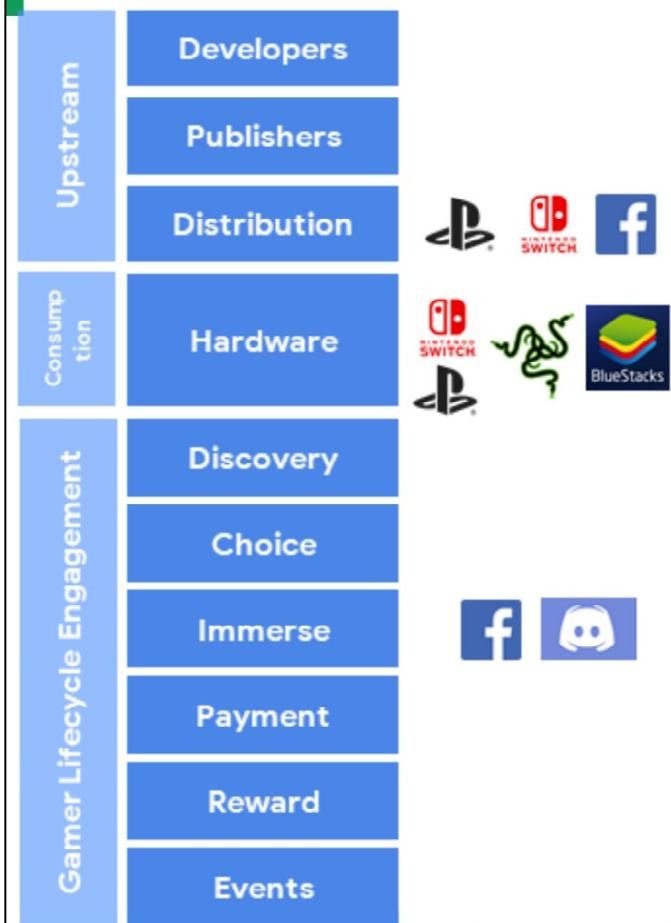
Slide 22

12

300 people... no strategy

Ka Kui Cheng Ye, 7/11/2018

There are multiple potential players also investing in the mobile gaming space



Next Generation Consoles: Next gen will be the last gen of consoles. Nintendo and Sony could also follow something similar and launch a cloud gaming business with their IPs.

Nvidia GeForce Now: Cloud gaming

Facebook Gameroom and Messenger: Leverage Facebook's users to capitalize on gaming

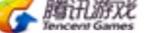
Discord: #1 gamer communication platform

Razer Lynda: Merging of PC and mobile devices

Bluestacks: #1 mobile to PC gaming emulator with ~50M MAU

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6

The good news is that we have multiple desirable assets within the gaming ecosystem

	Google	Amazon	Microsoft	Apple	Tencent	Valve	Others	
Upstream	Dev Tools	aws   	amazon    	Microsoft Studios 			STEAMWORKS 	
Consumption	Publishers				Tencent Games 	VALVE 		
Distribution	Distribution		amazon     	 		  	 	
Gamer Lifecycle Engagement	Hardware	   	fire  fire  TABLETS 	 			 	
	Discovery	  				  		
	Choice	 				  		
	Immerse	  	 CURSE 			  		 
	Payment					WeChat Pay 		
	Reward							
	Events							

Slide 24

13 Insert Nvidia GeFroce Now, FB Gameroom
Ka Kui Cheng Ye, 7/9/2018

14 Skip for now: move to different section
Ka Kui Cheng Ye, 7/10/2018

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Key principles we will follow for Google to win in Gaming (WIP)

USER

- Make **gaming for everyone** – not just gamers, but also **viewers** and **fans**
- **Breakdown the silos** – enable users to play anytime, anywhere, and on any device
- Establish **Google** as the **destination for end to end gaming**
- Drive **responsible gaming**, not addictive behavior

DEVELOPERS

- Make **game development for everyone** – not just mobile majors / AAA
- Give **devs tools needed to own their destiny** and engage users across lifecycle
- Make **paying for gaming as common as Netflix**. Re-establish premium and introduce subscription pricing while keeping freemium

PLATFORMS

- Android has best in class capabilities **designed and built** for superior gaming
- **Get Google 1P products to collaborate** rather than compete for gamer time
- Set up platform to **drive hardware innovation at scale for gaming**
- **Not focus on IP ownership, but focus on user journeys and engagement moments**

We envision a future where Google delivers a compelling end to end experience for users

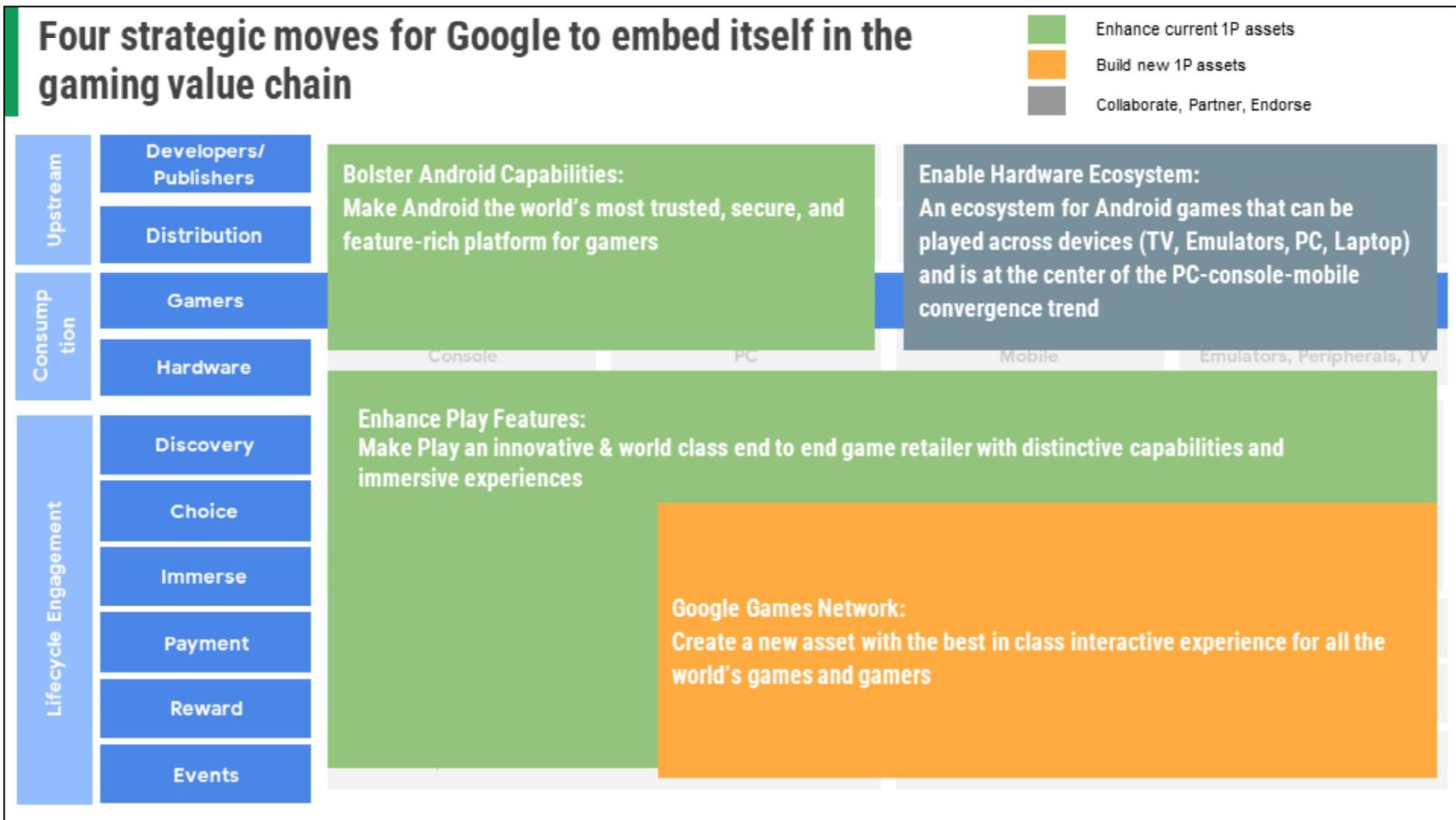
Placeholder for end-to-end Google gaming strategy (users or dev)

Slide 27

15

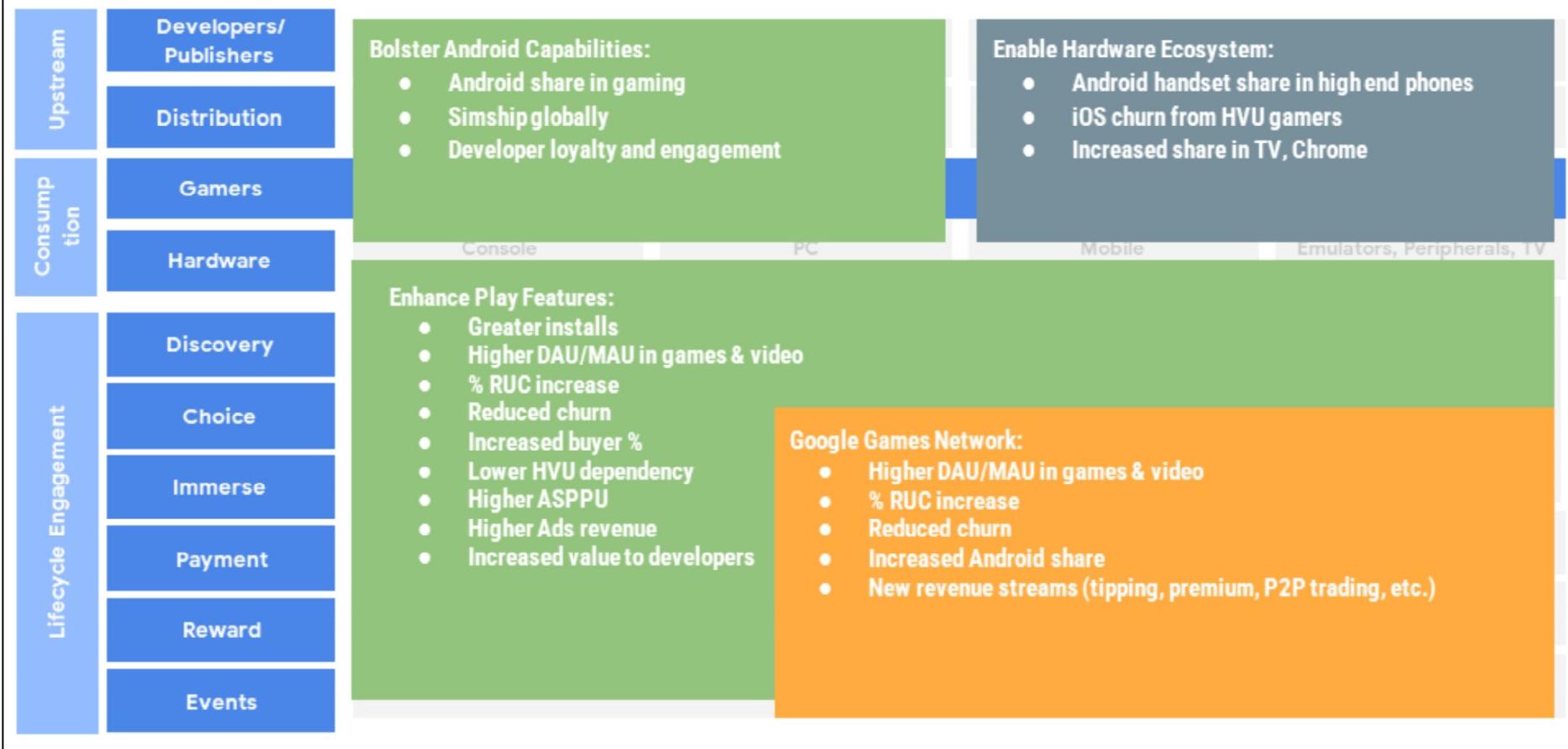
Redesign

Ka Kui Cheng Ye, 7/9/2018



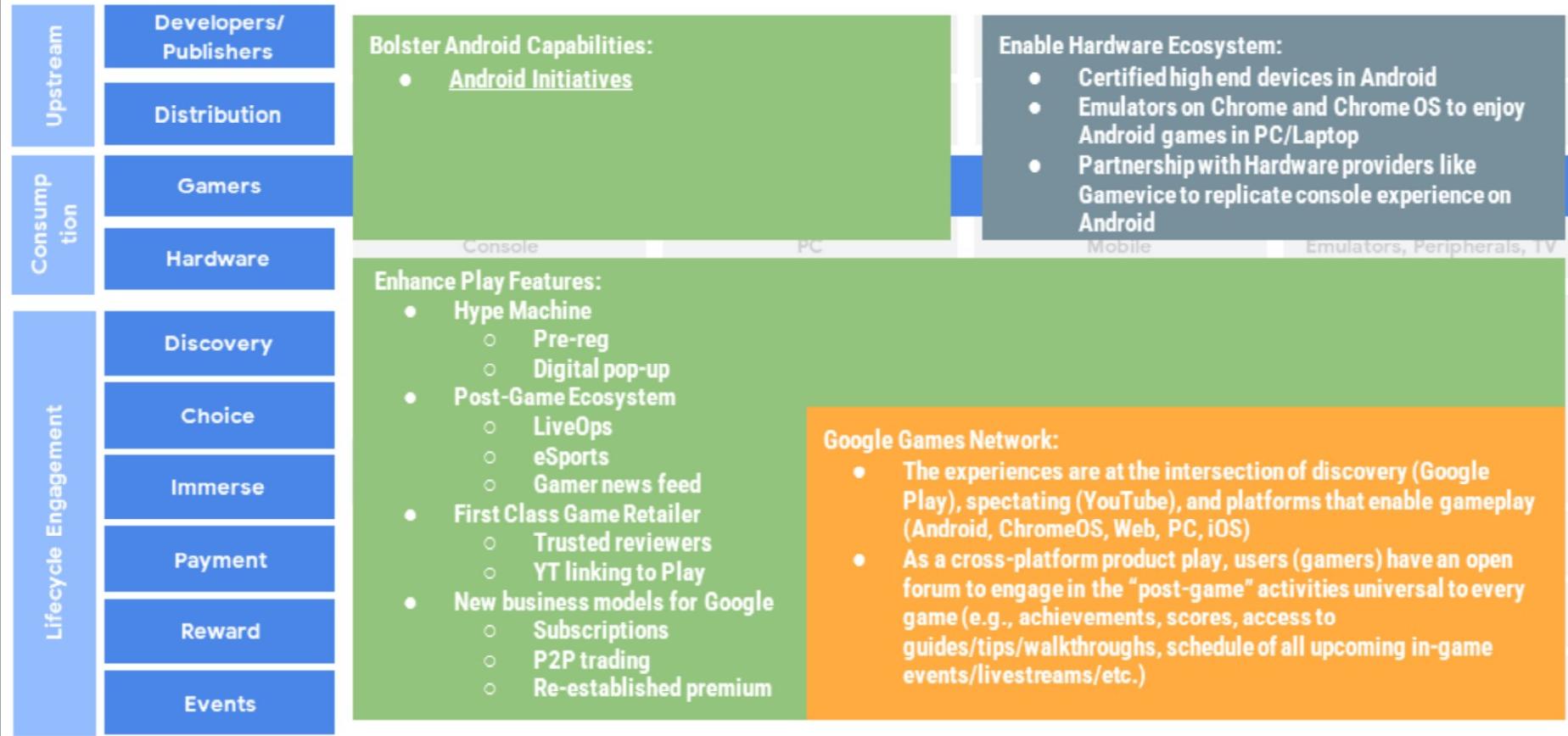
Each area helps us own and drastically improve key metrics

 Enhance current 1P assets
 Build new 1P assets
 Collaborate, Partner, Endorse



We already have a long list of ideas across each section

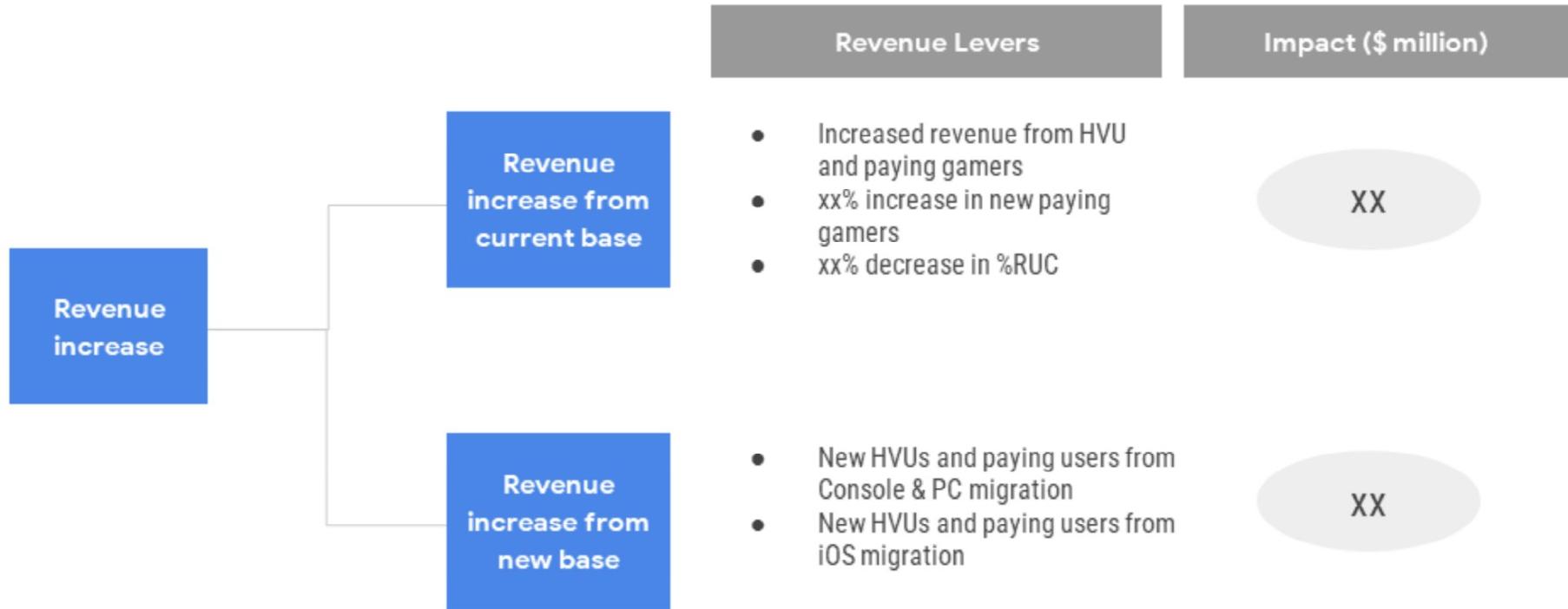
 Enhance current 1P assets
 Build new 1P assets
 Collaborate, Partner, Endorse



Slide 30

- 16 Karthik Moorthy @google.com FYI latest format for the list of initiatives
Ka Kui Cheng Ye, 7/9/2018
- 3 meta currency? to enable movement of sunk money between games/apps
Tian Lim, 7/16/2018

Enhancing our capabilities in gaming presents a direct \$XX billion opportunity for Play and Android



- Existing user marginal revenue vs. new user revenue vs. iOS churn user revenue

Other Google assets also gain significantly in this process \$XX and XX user gain

	Key Metric	Methodology	Impact
YouTube	Watch Time , DAU, MAU	<ul style="list-style-type: none"> Estimate # of videos (supply) with easier streaming/HFG games/etc. Estimate demand (DAU, MAU) and impact (rev in Ads as a result) 	XX
Payments	FOP Enabled/ NPU	<ul style="list-style-type: none"> Estimate increase in FOP enabled % in Android base with the introduction of a unified game experience, new business models (subscription, etc.) Calculate % increase in payment because of gaming 	XX
Cloud	Revenue	<ul style="list-style-type: none"> Estimate total infrastructure spend in gaming (from AAA, Console, Mob devs and pubs) Estimate % market share for Google based on bundled offer to devs (use Cloud pilot from Atul as base product offering and benefit) 	XX
Ads	Revenue	<ul style="list-style-type: none"> Estimate increased usage (time spent and download) by gamers in Play Store and new games network surface Estimate % increase in Ad revenue 	XX
Shopping	Revenue	<ul style="list-style-type: none"> Estimate % users who would use Google Shopping based on tight-knit loyalty program and hard bundles in key moments Estimate traffic to shopping that will be sent and impact to shopping revenue 	XX
Comms	MAU	<ul style="list-style-type: none"> Estimate PC/Console chat MAU size Estimate Projected mobile MAU size 	XX
Chrome + CrOS	MAU	<ul style="list-style-type: none"> Estimate increase in Chrome and Chrome OS usage based on emulator bundles on Android games 	XX
Assistant	DAU, MAU	<ul style="list-style-type: none"> Estimate increase in Assistant traffic, if we link Assistant to discovery in user journey design 	XX
Others (Hardware, VR/AR, Geo)	Varies	XX

Slide 32

17 Focus just on YT, Chrome, and Cloud is impactful enough.

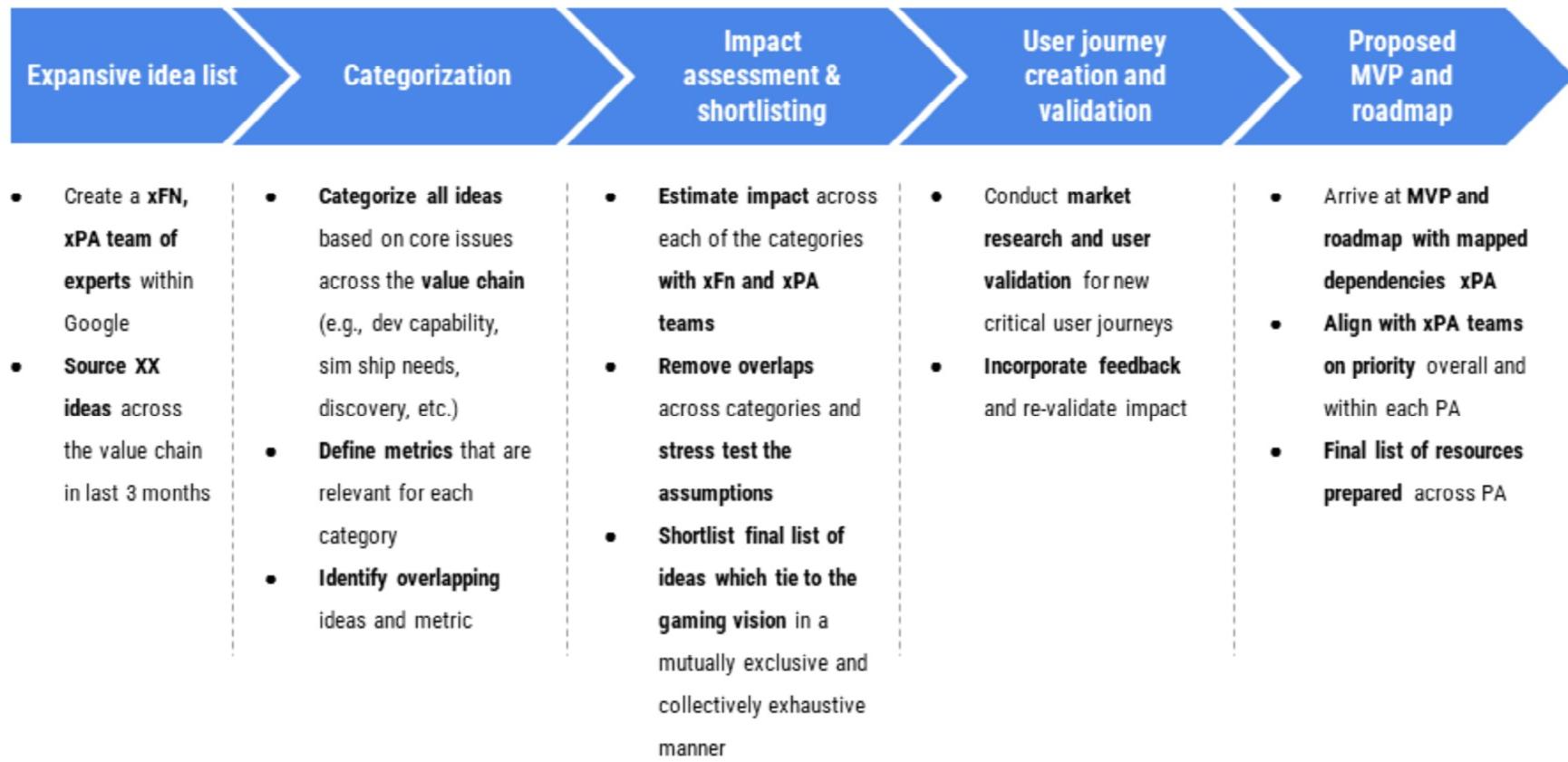
Ka Kui Cheng Ye, 7/9/2018

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We're following systematic approach to users and impact to arrive at the final product offering



Project Lion Force Next Steps

Structure & Flow

- Align on core framework we are using to make the TOP DOWN story in gaming
- Align on the flow leading up to 4 BHAGs

Quant Streams

- Agree on the estimation methodology top down ([Slide 32](#))
- Finalize on estimation methodology bottom up at idea level ([Slide 31](#))
- Engage xFn and xPA teams to complete assessment

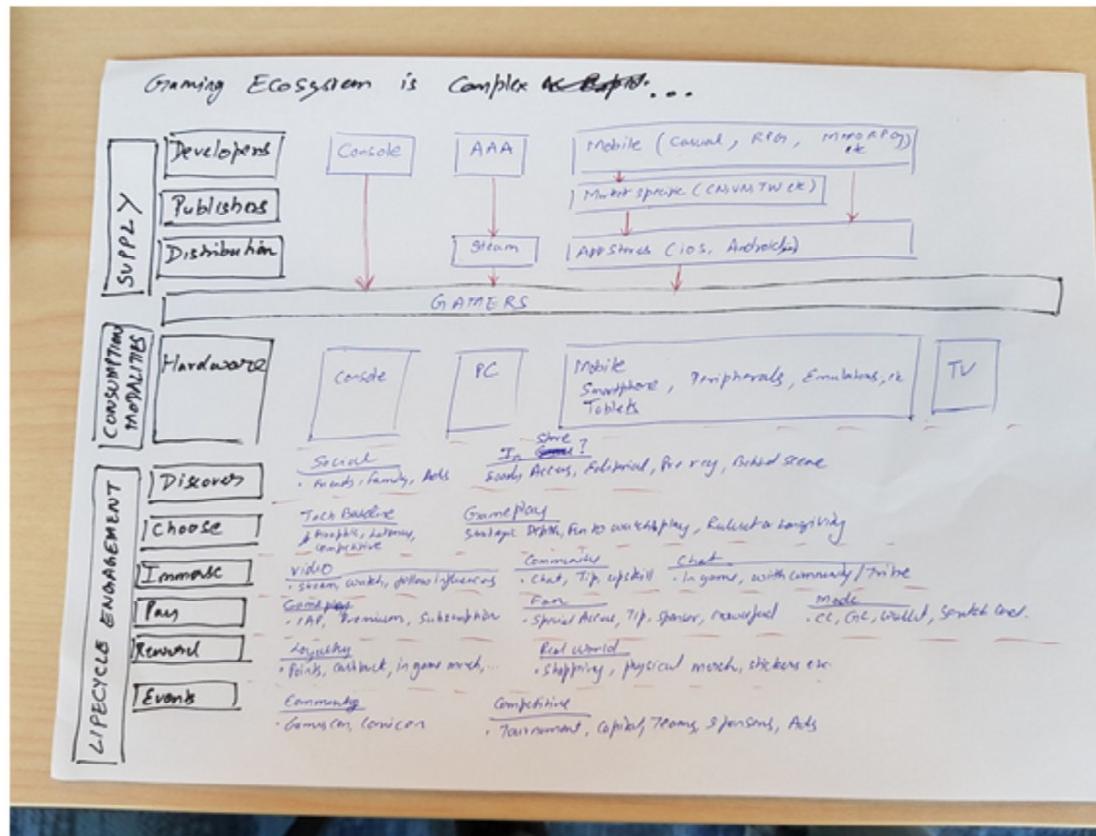
Working Rhythm & Next Steps

- We would like the quant stream to go in parallel with the MVP/user journey stream
- Aditya, Shelby, and Ka Kui to run the quant steam
- Karthik and Ka Kui to work with relevant PM teams for the product answer and detailing

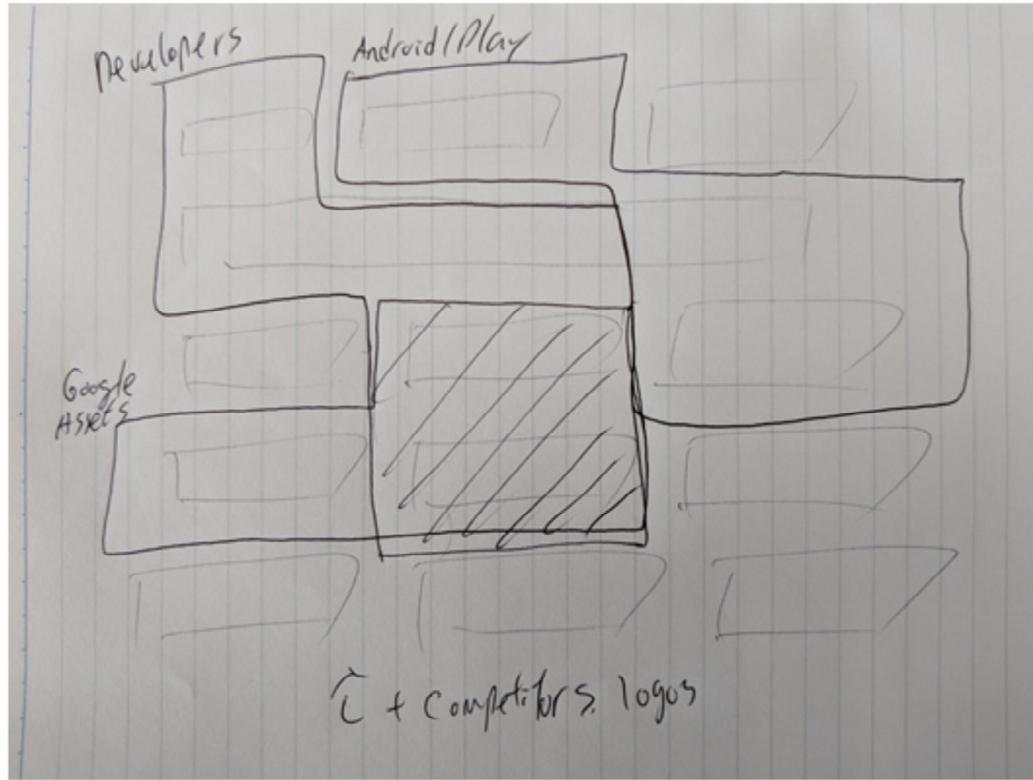


GRAVEYARD

Gaming ecosystem is complex



Framework (Strategy) + Value to Google (\$/Users) + Principles (Vision) = Where We Focus

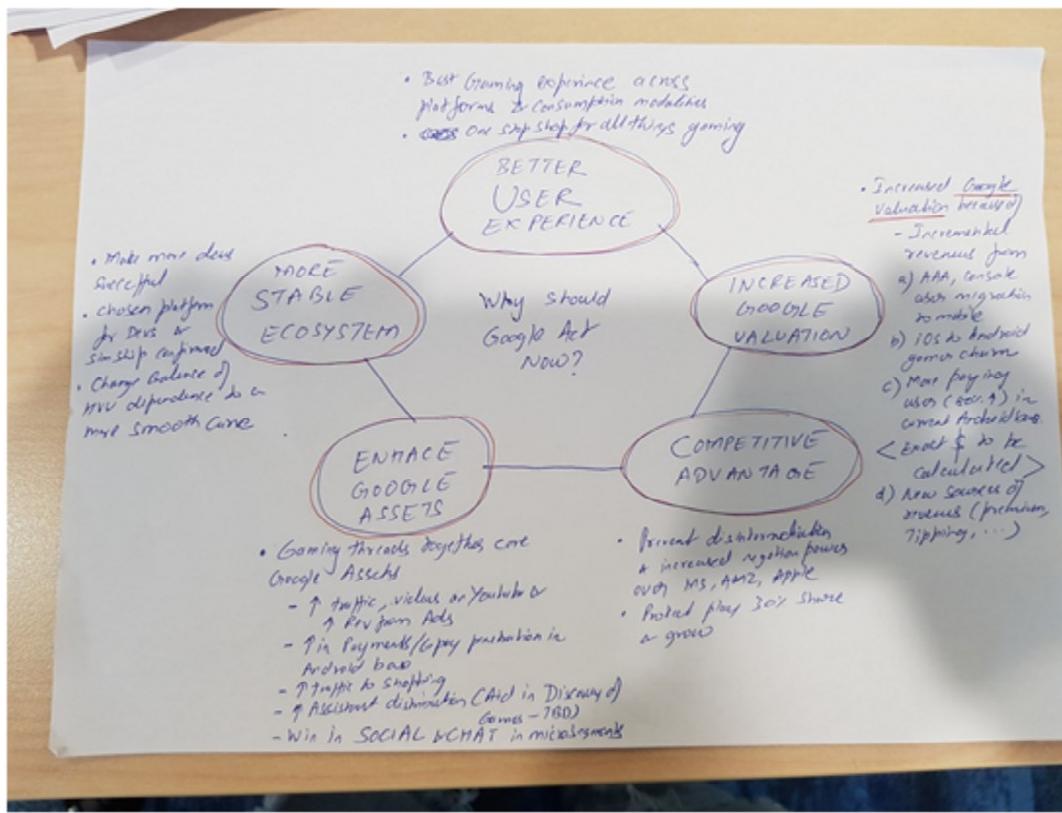


Slide 38

4 framework + google assets + where to play

Karthik Moorthy, 7/5/2018

Winning in gaming has multiple benefits to Google overall



Enhancing Android and Play capabilities presents a potential \$XX and XX users upside

New business models

- Tipping
- Fan subs
- P2P

Methodology

- ① PC/Console Mkt Size
- ② Mobile Mkt Size
- ③ % Capturable by Google

Assumptions

- Mobile Mkt size should follow similar trend as general mobile vs. PC/Console gaming in early days.

Impact

\$XX

Platform Convergence

- PC to Mobile
- Console to Mobile
- Emulators

Methodology

- ① Newzoo Forecast for PC vs Console vs Mobile
- ② Shift % from PC/Console to Mobile w/ Upper and lower bound
- ③ % of remaining into Android/Play

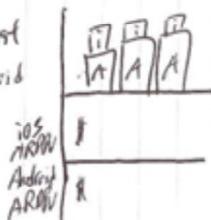
Assumptions

- Newzoo is starting benchmark
- Our initiatives will shift Newzoo forecast into mobile.

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iOS Churn

- ① Canalys iOS/Android forecast
- ② internal ARPPU for Android
- ③ App Annie for iOS ARPPU



Assumptions

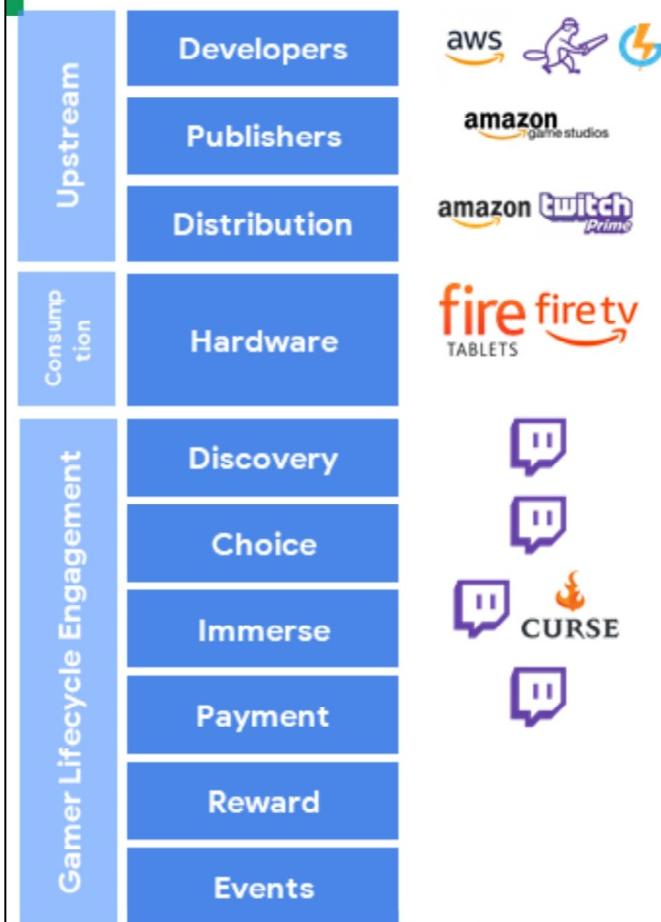
- Our initiatives shift Mkt share from iOS by X%
- Churn rate difficult/inaccurate to calculate.

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eSports?

- Existing user marginal revenue vs. new user revenue vs. iOS churn user revenue

Amazon is investing in a full suite of products for developers and users across the entire stack that collectively reinforce their ecosystem value



Key gaming assets

- AWS: Backend infrastructure for game developers
- Lumberyard: Game engine for developers
- Gamesparks: Games-as-a-Service platform for developers
- Amazon Studios: Proof of concept to showcase how all Amazon products work together
- Retail: Uniquely positioned to blend physical retail with digital offers to gamers (e.g. toy that unlocks game content)
- Appstore: Alternative to Play with Amazon Coins with discounts
- Fire: Fire Tablet and Fire TV as distribution points for the Amazon Appstore
- Twitch: Central gaming platform for users and source for new Prime subscriptions
- Curse: #1 gaming community for user-generated content (e.g. wikis for games)

How they threaten Google

- Become the preferred platform for developers as they can build (AWS and Lumberyard), reach and engage users (Twitch), and sell through Amazon
- Continue to shift eyeballs from YouTube to Twitch
- Disintermediate Play by continuing to provide discounts to HVUs via the Amazon Appstore and doubling down on their Fire devices to provide more surfaces on which to sell mobile games

- https://docs.google.com/presentation/d/1QGKh1Uw64RySwgulRoGiqeR4k947EKMuhfV4wSpINGI/edit#slide=id.g22d8a790a0_0_6